

What is claimed is:

1. A manufacturing method for oral quick-dissolving seamless capsules, comprising the steps of:

- 5       preparing a core liquid containing a filler material;
- preparing a shell liquid containing a shell material that includes one or more plasticizer selected from a group consisting of glycerin, propylene glycol, and polyethylene glycol, and a shell forming agent;
- supplying to a multiple nozzle, which has an inner nozzle and an outer nozzle that
- 10       surrounds the inner nozzle, the core liquid so as to be extruded from the inner nozzle, and the shell liquid so as to be extruded from the outer nozzle, in order to form multilayer liquid drops by extruding a multilayer jet from the multiple nozzle;
- forming seamless capsules by hardening the shell liquid of the multilayer liquid drops by reacting the shell liquid with a hardening liquid flowing through a pass, and
- 15       coating the core liquid with the shell material;
- separating the seamless capsules from the hardening liquid; and
- removing the hardening liquid adhering to surfaces of the seamless capsules separated from the hardening liquid and drying the surfaces to form seamless capsules that do not substantially stick to each other;
- 20       wherein seamless capsules are manufactured to have a particle diameter of 1 to 10mm, a mass ratio of shell material to filler material of 5:95 to 70:30, and the amount of added plasticizer is 20 to 70% by mass with respect to the total amount of the shell material, excluding water.

25   2. A seamless capsule manufacturing method according to claim 1, wherein the

plasticizer is glycerin.

3. A seamless capsule manufacturing method according to claim 1, wherein the amount of the plasticizer is 30 to 65% by mass with respect to the total amount of the shell

5 material, excluding water.

4. A seamless capsule manufacturing method according to claim 1, wherein the amount of the plasticizer is 40 to 60% by mass with respect to the total amount of the shell material, excluding water.

10

5. A seamless capsule manufacturing method according to claim 1, wherein the shell material includes sorbitol in an amount of no more than 10% by mass.

6. A seamless capsule manufacturing method according to claim 1, wherein the shell

15 material includes at least one of polysaccharide, a gelling agent, and a proteolytic agent, in an amount of no more than 10% by mass.

7. A seamless capsule manufacturing method according to claim 1, wherein the hardening liquid includes an edible oil.

20

8. A seamless capsule manufacturing method according to claim 1, wherein the step of removing the hardening liquid includes the steps of:

cooling the seamless capsules separated from the hardening liquid by immersing the seamless capsules in a coolant liquid consisting of a fluid that does not dissolve the

25 shell;

eliminating the coolant liquid adhering to the surface of the seamless capsules;  
cleaning the seamless capsules with an organic solvent; and  
drying the seamless capsules.